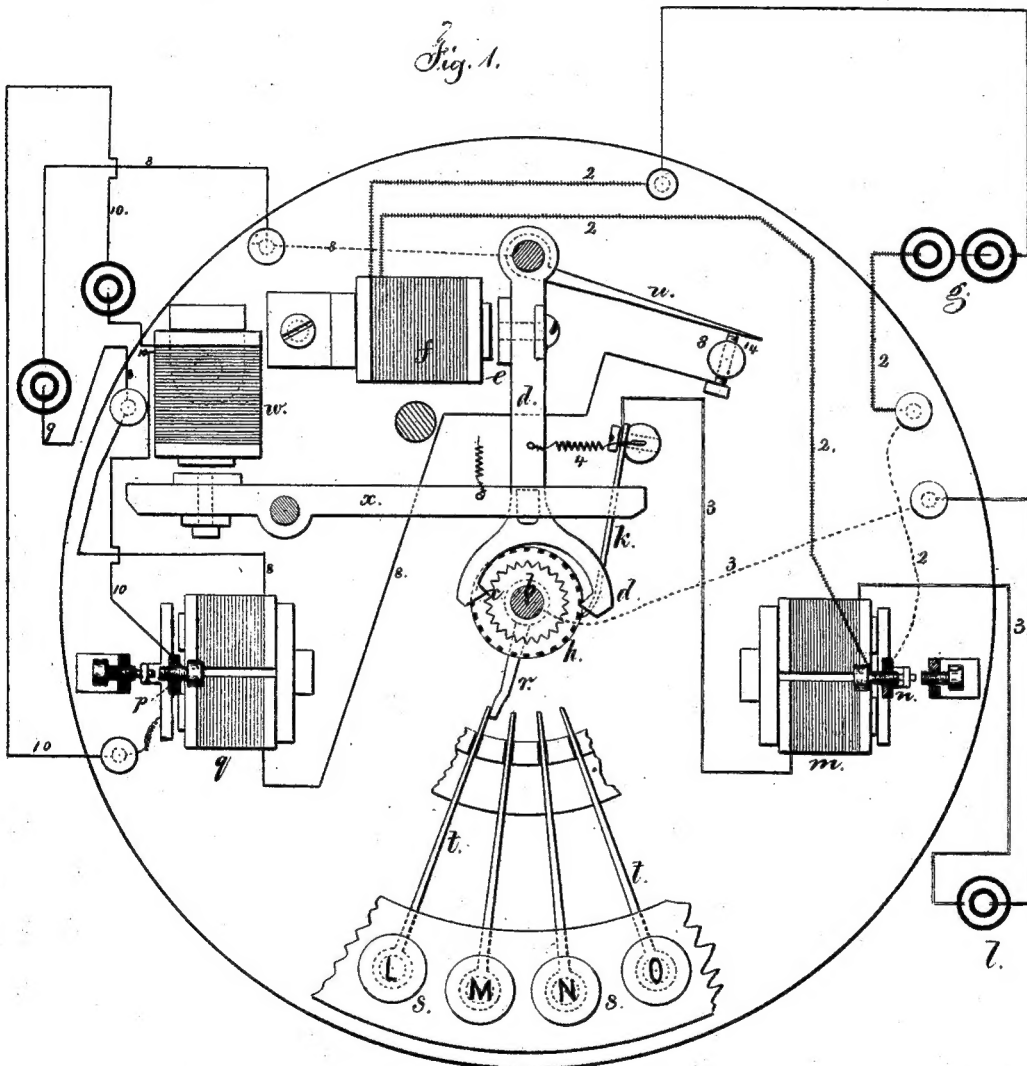


T. A. EDISON.
Printing Telegraphs.

No. 140,487.

Patented July 1, 1873.



Chas. H. Smith
Geo. D. Walker

Witnesses.

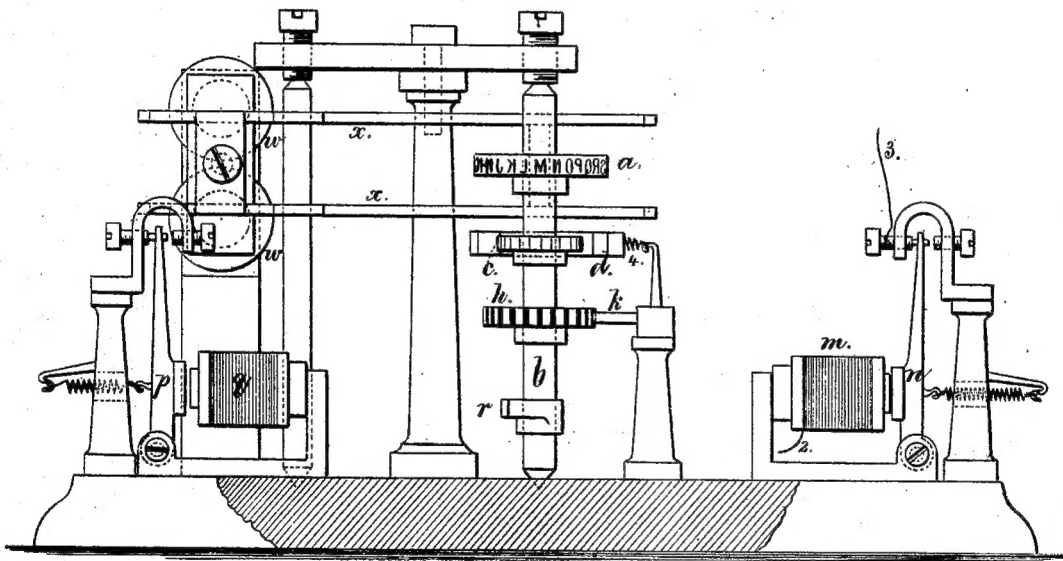
INVENTOR
Thomas A. Edison
Per. L. W. Serrell
ATTY.

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Fig. 2.



INVENTOR

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UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE GOLD AND STOCK TELEGRAPH COMPANY, OF NEW YORK, N. Y.

IMPROVEMENT IN PRINTING-TELEGRAPHS.

Specification forming part of Letters Patent No. 140,487, dated July 1, 1873; application filed February 18, 1873.

To all whom it may concern :

Be it known that I, THOMAS A. EDISON, of Newark, in the county of Essex and State of New Jersey, have invented Improvements in Printing-Telegraphs, of which the following is a specification:

In this improvement the transmission is effected by pulsations through a break-wheel, relay-magnet, and main line; and as the pulsation energizes the relay-magnet it closes a local circuit to a type-wheel magnet that acts upon pallets to rotate the type-wheel and the break-wheel, and in so doing breaks the main-line circuit, and allows the main line to break the local, and the spring of the type-wheel armature to draw the latter back, and by the pallets move the type-wheel and break-wheel around further, and reclose the main circuit, and repeat the operations before described. These connections are resorted to to prevent too rapid movement. The main-line pulsations act in all the instruments of the line to set the type-wheels through the local circuits. The transmitting-instrument is stopped at a point when both circuits are broken, and in each receiving-instrument the pallet-lever, being drawn back by a spring, closes a local circuit to a magnet that operates the printing-circuit and energizes the printing-magnet.

In the drawing, Figure 1 is a plan representing portions of the instrument and the circuit-connections, and Fig. 2 is a side view of part of the instrument.

The type-wheel *a* is upon a shaft, *b*, that has a pallet-wheel, *c*, operated by a pallet-lever, *d*, the armature *e* of which is moved by the magnet *f*, that is in the circuit 2 2, from the battery *g*. A break-wheel, *h*, upon the shaft *b*, and a contact-spring, *k*, of suitable construction, are in the circuit 3 from the battery *l*, in which circuit is the relay-magnet *m*, the lever *n* of which opens and closes the circuit 2.

The operation of these parts is, that when *m* is energized the lever *n* closes the circuit 2; this energizes the type-wheel magnets *f*, and by the pallet-lever *d* the type-wheel is moved half a space. This at the transmitting-instrument breaks the circuit 3 by one of the non-

conducting segments of the wheel *h* coming under the end of *k*. The circuit 3 being broken, the lever *n* falls back, breaking the circuit 2, and the magnets *m* *f*, discharging, allow the spring 4 to draw back the pallet-lever *d*, moving the break-wheel *h* far enough to close the circuit 3 again, and the operations are repeated, thus producing an automatic opening and closing of the circuits 2 and 3, and the speed of movement can be regulated by the tension of the armature-springs.

If the circuit 3 is the main line, then the circuit 2 will be local at the transmitting and receiving stations; but if the circuit 3 is local the circuit 2 may be the main line, and the circuit 3 will not be in use while receiving.

If a finger-key is depressed the arm *r* upon the shaft *b* is arrested by the lever *t* of the finger-key *s*, (a few only of these keys are shown, but they are of usual character,) and the parts are in the position shown; but both circuits 2 and 3 are broken, and the spring *u* closes the circuit 8 from the battery 9 to the local magnet *q*, the armature-lever *p* of which closes the printing-circuit 10, that passes through the printing-lever magnets *w*, so that a pause at the transmitting-instrument allows time for the energizing of the respective magnets *w* and the printing of the letter by the levers *x*.

The printing may be effected with one local circuit, if the spring *u* forms part of the circuit 10; and in cases where these instruments are used with two line-wires the line-wire forms part of the circuit 10 to the printing-magnet of the distant instrument or instruments. As the finger-key is raised the spring 4 draws the pallet-lever *d*, and turns the wheel *h* sufficiently to close the circuit 3, and the pulsations are set up as before. The time that the spring *u* is in contact with the circuit-screw 14 is momentary, except when there is a pause by depressing one of the keys; hence the printing-magnets will only be energized at that time.

I claim as my invention—

1. The combination of the type-wheel, pallet-wheel, circuit-wheel *h*, and pallets with the circuits 2 and 3 and electro-magnets *m* and *f*,

substantially as set forth, for automatically opening and closing the respective circuits and rotating the type-wheels, as set forth.

2. The printing-circuit closed by the spring *u* of the pallet-lever when the circuits 2 and 3 are broken, and the movement of the type-wheel arrested by the depression of a finger-key, in combination with the pallets that are moved by the spring and close the type-wheel

circuit when the finger-key is released, substantially as set forth.

Signed by me this 13th day of February, A. D. 1873.

THOMAS A. EDISON.

Witnesses:

GEO. T. PINCKNEY,
CHAS. H. SMITH.